

Professor Paul Harper, Cardiff University

## **Maths saves lives!**

Day 2 – Keynote Speaker III (09.15-10.15)

A recent paper by Freeman et al (2014) “Active Learning Increases Student Performance in Science, Engineering and Mathematics” evidences the benefits of active student learning as opposed to traditional lectures. To quote from the paper “Active learning engages students in the process of learning through activities and/or discussion in class, as opposed to passively listening to an expert. It emphasizes higher-order thinking and often involves group work”.

This certainly resonates with my own experiences, as both a student and teacher, and in this talk I will describe the ways in which I am trying to provide active learning opportunities, especially on the MSc programmes on which I teach and have overall responsibility for. One particular module is healthcare modelling where the students seem to particularly enjoy and benefit from group activities, visiting speakers from the health service, and case studies that stimulate discussion and engage students by allowing them to observe how mathematical principles may be applied in real-life situations.

Certainly the healthcare modelling research of the OR group here in Cardiff is making an impact in the real-world, and is literally helping to save lives; and now perhaps we can also claim helping to save students’ lives by encouraging higher-order thinking!

Paul is Professor of Operational Research and Deputy Head of the School of Mathematics, Cardiff University. He is also Director of the Health Modelling Centre Cymru (hmc2), a pan-Wales centre for modelling in healthcare, Director of Engagement for Mathematics, and Director of MSc programmes in OR, Applied Statistics and Risk. His research interests are primarily in mathematical modelling and stochastic methods applied to healthcare systems, and Paul has been an investigator on in excess of £5m of funding from various research councils and direct from the health service. More recently Paul was appointed as an Editor for the journal Health Systems (Palgrave Macmillan).

Paul is particularly passionate about mentoring and working with early career researchers (PhD students, Post-Doctoral Researchers and Lecturers), and for the MSc programmes in OR and Statistics which he helped to establish several years ago.

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